

REMARKS

The Office action dated January 17, 2006, has been carefully reviewed and the foregoing amendment has been made in response thereto.

Claims 22-29 stand rejected under 35 USC 112, first paragraph, for failing to comply with the written description requirement. The Office action states that the specification does not describe the article defined by Claim 22 because it does not describe the consecutive heat treatments of a trunnion shoulder surface and a trunnion surface of each trunnion consecutively until the trunnion shoulder surface and trunnion surface have been heat treated. The claims, as originally filed, disclose the process, the specification at paragraph [0031] describes that process, and Figure 1 illustrates graphically the process wherein line 80 indicates repeating the heat treatments of each of the trunnions in consecutive order after a first trunnion has been heat treated.

Claims 22-29 stand rejected under 35 USC 103(a) as unpatentable over Mizokoshi (US Patent 5,098,342) in view of the prior art discussed at paragraphs [0003] – [0004] of the present application. The Office action acknowledges that the '342 patent does not specify that the trunnion surfaces and the trunnion shoulder surface would comprise a hardened case, nor does that reference teach or suggest induction heat treatment applied to a trunnion shoulder surface and a trunnion surface. The Office action states that applicant admits the prior art contains a method of heat treatment to form a hardened case by carburizing the surface of the trunnions in order to provide strength in the load bearing areas of the outer surface. The Office action then concludes that it would have been obvious to one of ordinary skill to modify the article of the '342 patent by applying a heat treatment to form a hardened case by carburizing the surface of the trunnions.

Carburizing results upon placing steel parts in a carbonaceous environment (with charcoal, coke, carbonates, or with carbon-dioxide, carbon-monoxide, methane, or propane) at a high temperature for several hours. The carbon diffuses into the surface of the steel, altering the crystal structure of the metal. Gears, ball and roller bearings, and piston pins are often carburized. From this it can be seen that

carburizing is a different process from induction heat treatment, in which a magnetic field is produced by energizing a coil such that a trunnion rotating within the coil has electrical current induced, which current heats the surface of the trunnion within the coil. There is no carbonaceous environment required and the induction heat treatment can be applied through local areas of the article being processed, whereas carburizing is applied to the entire surface of the component, as paragraph [0004] of this application mentions. In fact, because the carburizing process treats the entire surface of the component, the use of carburizing for case hardening a trunnion is mentioned in the specification as limitation of the carburizing process, in addition to various other limitations recited in paragraph [0004]. Furthermore, Claim 22 is not directed to a carburizing process, but to induction heat treatment. Accordingly, the '343 patent in combination with the admitted prior art, do not form a combination that would comprehend, teach or suggest the induction heat treatment invention recited in Claim 22.

The Office action then discusses Claim 22 and its product-by-process limitations. Claim 22 has been amended to remove the product-by-process limitations. Furthermore, Claim 23 has been canceled so that the product-by-process limitations it contained are no longer an issue in this case. Claims 24-29 have been amended so that they depend ultimately from Claim 22 rather than from Claim 23.

New Claims 30-42 define a method according to this invention and is fully supported by the specification, original claims, and Figure 1.

The claims remaining in this application appear now in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,



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